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- 2 Q. And the intent of your presentation to
3 the consensus committee, if you're
4 given that opportunity, is to create a
5 geographical restriction to the
6 application of (b)(1) walls.
- 7 A. Simply -- simply as an exemption that
8 (b)(1) should not be utilized in areas
9 identified as (b)(4). (B)(4) was
10 offered as an alternative to (b)(1);
11 therefore, it doesn't make sense that
12 both options would be proper.
- 13 Q. So you want the code to change so that
14 you can't build a (b)(1) wall in the
15 humid and fringe-zone climate.
- 16 A. I believe that would be the proper
17 thing to do, yes, sir.
- 18 Q. And until that change happens, it's
19 still okay to build one there, by code.
- 20 A. By code. If they're silly enough to
21 keep doing it, then I guess so.
- 22 Q. Now, page 1 of your report, this is
23 just technical data it spits out. You

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183

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- 1 said the home is rated for 2.3, but
2 it's three-ton, so it's --
- 3 A. Three --
- 4 Q. -- a little bit oversized.
- 5 A. Three and a half, yes.
- 6 Q. Three and a half. Okay. So it's 1.2

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7 tons more.

8 A. Right. But you can't -- you can't
9 actually put that specific size on
10 there. The closest you could get to it
11 would be a two and a half ton by that,
12 but there are other considerations that
13 have to be taken into effect other than
14 just that size. In other words, the
15 other consideration is how much air do
16 you have to move to each room and then
17 what size ductwork are you going to
18 use. This load calculation is only a
19 portion of what has to be done to
20 determine the proper size air
21 conditioner for this house.

22 Q. Hypothetical, if you got hired to buy
23 and install an AC unit on the Murphy

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184

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1 home, what would be the optimal size,
2 in your judgment, that should be
3 installed?
4 A. Based on the duct system -- the duct
5 system of this home was built to have a
6 capacity of 57,000 BTUs, which means we
7 have a -- have a much more -- a much
8 bigger duct system put in by the
9 manufacturer than was actually needed.
10 I believe I would still recommend the
11 three and a half ton, because you have

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12 to find a balance between what the
13 manufacturer put in there for the duct
14 system and what your AC sizing is.
15 Now, hypothetically, in a perfect
16 world, I would have liked to see the
17 manufacturer do the load calculations
18 and use the right size duct so that you
19 could possibly downsize to a three-ton
20 unit.

21 Q. But this home's not defective as a
22 result of the ductwork.

23 A. No. I just don't think it's optimum.

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185

1 Q. In terms of noncompliance, defect,
2 serious defect, and imminent safety
3 hazard, are you rendering any opinion
4 that this home qualifies under any of
5 those categories?
6 A. I was -- that's -- it's my opinion that
7 that will be left up to the courts.
8 Q. Well, is it fair to say that's not in
9 your report and you're not prepared to
10 make those opinions at trial?
11 A. I can make my opinions as to what I
12 believe is happening. But as far as
13 specifically stating, I've not
14 specifically stated in my report
15 whether it's considered to be imminent
16 safety hazard, serious defect, you

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17 know --

18 Q. Well, I don't mean to fuss at you. But
19 my only reason for asking you that is I
20 want to make sure at trial that that's
21 not going to change.

22 A. Right. I say it's improper -- like I
23 said in the other ones, if I'm asked a

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186

1 personal opinion, you know, I believe
2 it is at least a violation from
3 noncompliance because of 303. I mean,
4 it's not -- it's not providing that
5 durable wall structure.

6 Q. So this home is noncompliant under 303,
7 in your judgment.

8 A. At least, yes, sir.

9 Q. Now, let's turn -- the next page, you
10 have a floor plan, which I guess is a
11 rendering your program did.

12 A. Correct.

13 Q. Not necessarily to scale, but it just
14 sort of lays out the bedrooms.

15 A. It actually -- it is to scale.

16 Q. Okay. And then the next page, you've
17 got some heating and cooling equipment
18 data there. And then you have by room.
19 And what is all this data indicating?
20 what are you looking for and indicating
21 here?

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22 A. what it tells us there is what the CFM
23 requirement is for that room to get the

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187

1 air changes per hour that we need to
2 maintain an even temperature throughout
3 the house.

4 Q. And do you find that this home is
5 consistently within your tolerances?

6 A. Consistently within my tolerances?

7 Q. Did you see a problem here? I don't
8 know how to ask it. But --

9 A. Yeah.

10 Q. -- do you see a problem here?

11 A. well, based on the fact that the
12 homeowner says they didn't note any
13 areas of discomfort, then no, I didn't
14 go into completely investigating that.
15 My notes, I think you see there on the
16 side, were simply where I had written
17 down, you know, again, in that perfect
18 world, what I would have utilized if
19 the proper ductwork would have been
20 able to be run and what size unit that
21 I would have recommended.

22 Q. what do these numbers on the right
23 indicate? Like, for example, six to

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188

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- 1 110, what does that mean?
- 2 A. Yeah. The -- I would have -- in,
3 again, perfect world hypothetically, if
4 you could run the proper size ductwork,
5 a six-inch flex duct would have been
6 the proper size for that room. Five
7 inch on five inch, seven inch, two six
8 inches, that's what those numbers --
9 the numbers on the right would have
10 been the approximate air flow out of
11 those vents, totaling that up to see
12 what the total CFM requirement would
13 have been versus what our units are
14 capable of. Again, that was
15 hypothetical. That doesn't --
- 16 Q. Okay. But fair to say this page of
17 your report doesn't indicate any
18 problem with the home?
- 19 A. No. I don't think it had any bearing
20 on the --
- 21 Q. And the next page, same answer?
- 22 A. Right. Those are just totals from the
23 front.

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189

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- 1 Q. Building duct leakage test, goes on for
2 two pages, which is the next area of
3 your report.
- 4 A. Correct.

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- 5 Q. What's the percentage duct leakage in
6 this home?
- 7 A. That's the building leakage test.
- 8 Q. Okay. We haven't gotten to the -- do
9 you have a duct leakage test? I don't
10 see one.
- 11 A. No, I do not have -- it's in my notes,
12 but I didn't print out a --
- 13 Q. What is the duct leakage in this home?
- 14 A. The duct leakage in this home -- let me
15 go back to my notes -- was
16 approximately 30 CFM on the total. It
17 was so low to the outside, I couldn't
18 get a reading. So that was very
19 minimal.
- 20 Q. Do you have notes -- I don't think I
21 have that.
- 22 A. Yeah. This is the exhibit right here
23 (indicating).

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190

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- 1 Q. Yeah. And I've got the same one here.
2 Where is the notes you're looking at?
3 I don't see any handwritten --
- 4 A. The very back. Start from the back and
5 come five backs toward. Bingo.
- 6 Q. And what's the duct leakage?
- 7 A. Total -- 30 CFM was the total duct
8 leakage tested.
- 9 Q. How do you rate that?

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- 10 A. That would be excellent.
- 11 Q. Would that be Energy Star good?
- 12 A. Oh, absolutely.
- 13 Q. I'm used to people talking in terms of
- 14 3 percent, 5 percent. How would you
- 15 equate 30 CFM?
- 16 A. Oh, well less than 3 percent, I would
- 17 think.
- 18 Q. So you're well-satisfied with the
- 19 integrity of the ducts.
- 20 A. Yes.
- 21 Q. All right. Is there anything in these
- 22 notes, other than the mold testing,
- 23 which we've talked extensively about,

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191

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- 1 is there anything in these notes which
- 2 indicate to you a problem with this
- 3 building other than the mold testing,
- 4 in this exhibit?
- 5 A. Contributing to the problems that are
- 6 in the wall?
- 7 Q. Yeah.
- 8 A. No, sir. I think -- I think everything
- 9 as far as the performance of the
- 10 building was very well.
- 11 Q. Now, had you found significant duct
- 12 leakage, would your opinion change to
- 13 indicate that the duct leakage was
- 14 causing a problem in the walls?

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15 A. I would have said that it was
16 escalating the problem in the walls. I
17 would have expected duct leakage to
18 make the problem worse.
19 Q. Do you have any judgment as to -- let's
20 identify two drivers, the negative
21 pressure caused by duct leakage and the
22 Second Law of Thermodynamics, which as
23 you described causes greater energy to

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192

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1 travel to areas of lower energy. Have
2 I said that right?
3 A. Correct.
4 Q. Can you tell me or refer me to any
5 scientific authoritative guide or
6 treatise which would tell us, generally
7 speaking in the building science world,
8 which of those two drivers from an
9 apportionment or percentage standpoint
10 controls the building? In other words,
11 is one 50 percent and the other 50
12 percent? Is it 10 percent/90? Do you
13 have any judgment on that?
14 A. No, sir. It's -- no, sir.
15 Q. If this had, hypothetically speaking,
16 25 percent duct leakage, okay, how much
17 of the problem would you attribute to
18 that aspect?
19 A. Well, the -- the -- the -- I don't --

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20 well, we're hypothetical here. But --

21 Q. Yeah.

22 A. -- I don't know that I can say that 90
23 percent -- I mean, that 90 percent of

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193

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1 the mold growth is because there's a
2 vinyl-covered wallboard here and 10
3 percent of that that's made worse by
4 the duct leakage. I don't think I
5 could do that.

6 Q. So of the drivers you've identified,
7 you cannot analyze or apportion
8 causation among them. Is that a fair
9 statement?

10 A. The fair statement would be the
11 vinyl-covered wallboard is the problem.
12 That is the problem itself; that's the
13 root cause. And then if hypothetically
14 there were duct leakage or other stuff
15 like that, I don't know that there's a
16 way to proportion. I've never seen
17 that done.

18 Q. And you can't do it.

19 A. I'm not aware of it being able to be
20 done and I can't do it, no, sir.

21 Q. You've seen walls in the field, not
22 necessarily Southern Energy. I'm just
23 talking about generally speaking.

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Page 159

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194

1 You've seen really bad walls in the
2 field where the actual gypsum is mush.

3 A. Yes, sir, I have.

4 Q. Where you can stick your finger through
5 the gypsum, leave a mark, put your
6 finger hole through it.

7 A. Yes, sir, I have.

8 Q. Would you agree with me that homes that
9 display that level of failure,
10 generally speaking, have evidence of
11 substantial negative pressure
12 associated with them?

13 A. I've seen them with and without.

14 The -- the primary -- the biggest issue
15 is the temperature which the home is
16 being kept. The colder the
17 temperature, the more prevalent the
18 problem is going to show up. And
19 then -- but I've seen houses that were
20 kept at 75, 76, 78 even, but they had
21 significant negative pressure where the
22 problems were not to that level. But I
23 think it's a matter of temperature and

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195

1 time.

2 Q. But would you agree that substantial
3 negative pressure shortens the time

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4 envelope?

5 A. Oh, yes, I would definitely agree that
6 substantial negative pressure makes it
7 worse.

8 Q. Now, the humid and fringe zone climate
9 actually begins somewhere in Montgomery
10 County. Do you agree with that?

11 A. I've not examined it that close, so I
12 really don't know.

13 Q. The humid and fringe zone climate in
14 Alabama is a latitude that kind of
15 splits the state somewhere in half or
16 in thirds. It runs east to west like a
17 latitude line on a map; right? It's
18 not perfectly straight but, I mean, it
19 cuts across the state this way
20 (indicating).

21 A. It's identified county by county.

22 Q. Right.

23 A. So whatever the geographical line of

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196

1 that county is.

2 Q. All right. What I'm trying to see if
3 you'll agree with me on is that we're
4 at the very edge of the fringe climate
5 in Montgomery. There is no county more
6 northern than this that even falls
7 within the humid or fringe zone
8 climate.

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9 A. I've not researched that, but if you
10 say so, I'll take your word for that
11 one.

12 Q. My point is, is would you agree with me
13 that if we move this house twenty miles
14 up the road to the next county -- let's
15 say we put it in Prattville.

16 MR. SIMPSON: Lance, is
17 Prattville in Montgomery
18 County?

19 MR. GOULD: It is not.

20 MR. SIMPSON: What county is
21 that?

22 MR. GOULD: It's Elmore.

23 MR. SIMPSON: Elmore.

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197

1 MR. GOULD: I'm sorry.

2 Autauga.

3 Q. Autauga County. Let's look here in the
4 book here for a second. I don't know
5 if I have the current one.

6 Hypothetically, if Autauga is
7 not on the list of fringe or humid
8 climates and the house was in Autauga
9 County, would the Murphies have a case?

10 A. I don't know what determines them
11 having a case. I can tell you that --
12 that elevation is the primary factor,
13 so you may have some areas within an

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14 independent county that actually have a
15 higher elevation that are going to have
16 lesser exposure to that high humidity
17 and you may go into other counties
18 that -- that may have lower elevations
19 that may have similar situations.

20 So --

21 Q. But you're not looking at any houses
22 for the Beasley firm that are outside
23 the humid and fringe zone climates?

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198

1 A. I look at the houses that they send me.
2 I don't identify what county they're in
3 or if that's in the --
4 Q. Could you tell me --
5 A. -- proper county. So I really --
6 again, they give me the house and I go
7 and inspect it and I tell them what I
8 find.
9 Q. All right. Let's take the same Murphy
10 home. At what point in geography does
11 the Murphy home become a good home or
12 an acceptable home? How far north do
13 you have to move it before it's okay?
14 A. In my opinion, out of -- this is my
15 personal opinion -- out of Thermal
16 Zone 1, what's identified by HUD as
17 Thermal Zone 1.

18 Q. All right. So Thermal Zone 1 ends at
Page 163

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19 the Alabama/Tennessee boarder.
20 A. Correct.
21 Q. So if this home moves over into
22 southern Tennessee, you're okay with
23 it?

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199

1 A. I think you -- I think your margin of
2 error increases greatly and I -- I --
3 about as far north as I've ever seen a
4 home with this problem, I really -- I
5 can't recall. I'm thinking maybe -- in
6 Mississippi, I remember going on one in
7 Columbus, Mississippi, but there were
8 some -- you know, that house has a
9 tremendous amount of duct leakage and
10 stuff and some other factors.

11 Q. In your --

12 A. But --

13 Q. In your pitch to HUD, the consensus
14 committee that we've discussed, are you
15 advocating the abolition of (b)(1)
16 homes in Thermal Zone 1 or just in the
17 humid and fringe zone climate?

18 A. No. For the purpose of being able to
19 get this standard to where -- to where
20 I feel it has the most likely
21 opportunity to get past, was to exempt
22 it from the areas that have already
23 been identified as the hot, humid

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200

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1 climate in (b)(4). In -- in
2 establishing -- in establishing the
3 opportunity to have that code change,
4 you -- even though I may like an even
5 higher fudge factor -- I'd like to get
6 it further north. If I had it my way,
7 I would -- you know, I would probably
8 like to see them go all the way to
9 Thermal Zone 1. But the likelihood of
10 that happening, I think, is very slim,
11 whereas we already have (b)(4) that has
12 identified -- they've agreed is a
13 problem area and --

14 Q. But here is my point. The way you're
15 currently formulating your proposal to
16 HUD, you want manufacturers to stop
17 building (b)(1) walls in the humid and
18 fringe zone climate.

19 A. That's correct.

20 Q. And it would be acceptable under your
21 current proposal to HUD for a
22 manufacturer to build a (b)(1) wall in
23 other than the humid and fringe zone

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201

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1 climate.

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- 2 A. It's still has to perform. It still
3 has to -- you know, you take that home
4 and you -- and it doesn't work, then
5 there are still issues, I think, that,
6 just because you complied with that
7 prescriptive statement, I do not
8 believe relieves the manufacturer of
9 the right of doing -- the
10 responsibility of doing it right.
- 11 Q. Oh, I understand. But you're just --
12 from just a code standpoint, you just
13 want to outlaw (b)(1) just across the
14 board in the humid and fringe zone
15 climate.
- 16 A. That's what I've suggested, yes, sir.
- 17 Q. If I wanted to get what you're actually
18 sending to HUD -- have you actually
19 sent it to them?
- 20 A. Yes. I've already submitted to NFPA.
- 21 Q. What is that document called that
22 you've submitted?
- 23 A. The proposal, HUD change --

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202

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- 1 manufactured housing -- I'll be glad to
2 give you a copy of it. I mean, it's
3 published out there now. I have no
4 problem with it.

5 MR. SIMPSON: Can you --

6 MR. GOULD: What's it

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called?

8 THE WITNESS: It's the --

9 MR. GOULD: I'll just say
10 your HUD proposal.

11 THE WITNESS: Proposal
12 change. HUD code
13 proposal change.

14 A. I'm drawing a blank on what the title
15 of it was.

16 Q. Is this that study you did, removing
17 the barriers?

18 A. There's a two-page submission form that
19 has to go with that. But yes, I've
20 submitted that full copy and then I'm
21 submitting -- I've already talked to
22 them and I'm going to submit them
23 twenty more copies of it, full-color

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203

1 copies, so that they can distribute
2 that to the members. But there is a
3 proposal form that had to be submitted,
4 and December 1st was the deadline for
5 submission. And it was submitted last
6 week.

7 Q. Yeah, if I can get -- I think Greg and
8 I would both like to get a copy of
9 that.

10 A. Yeah.

11 Q. I'd like to see it. Are you on the

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12 agenda right now, the consensus --
13 A. Not as of yet. I know that there are
14 people lobbying for that, but --
15 Q. Who is lobbying for it at this point?
16 A. To my knowledge, Michael Lubliner at
17 the University of Washington is the one
18 who -- who's recommended and asked if I
19 would be willing to do it, and I said
20 absolutely. And then Joseph Lstiburek
21 said he --
22 Q. What is your --
23 A. -- would like to be part of that.

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0

204

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1 Q. -- connection with Dr. Lubliner? Is
2 that his name?
3 A. Yeah. Michael Lubliner. He's at the
4 at the University of Washington. We
5 served on the NFPA mechanical committee
6 back in 2000 or so, so I knew him from
7 there. And then I guess over the last
8 couple of years, I've seen him up at
9 the building science symposium in --
10 Q. Y'all are acquaintances or friends
11 or --
12 A. Acquaintances, yeah, acquaintances.
13 But I've not --
14 Q. Is he lobbying for a similar change in
15 the Northwest climate where they have
16 moisture issues?

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17 A. I'm not sure. I don't know. I'm not
18 familiar with that. I know he --
19 his -- his primary deal over the last
20 couple of years -- well, he's worked on
21 a lot of different stuff, so I don't --
22 I can't say what his primary . . .
23 Q. Now, you're not making any kind of

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205

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1 valuation opinions in this. You're not
2 saying what the home's worth or what
3 it's going to cost to fix it?
4 A. No. No, sir.
5 Q. You're not making any recommendations
6 on repairs; you're just identifying
7 what you think is wrong with the home;
8 is that correct?
9 A. Yes, sir, that's correct.
10 Q. And you don't have any independent
11 setup opinions of the home?
12 A. No, sir.
13 MR. SIMPSON: I think that's
14 it. Let me talk to my
15 colleague here, and
16 we'll step out just a
17 second.
18 (Brief recess)
19 MR. SIMPSON: Thank you.
20
21 * * * * *

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